



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,520	06/04/2001	Hussein F. Salama	CISCO-3376	5228
49715	7590	04/04/2006	EXAMINER	
THELEN REID & PRIEST LLP			SORRELL, ERON J	
CISCO			ART UNIT	
P.O. BOX 640640			PAPER NUMBER	
SAN JOSE, CA 95164-0640			2182	

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/874,520	<b>Applicant(s)</b> SALAMA ET AL.	
	<b>Examiner</b> Eron J. Sorrell	<b>Art Unit</b> 2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 51-54 is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-22, 24-34, 36-46 and 48-50 is/are rejected.
- 7) ☒ Claim(s) 11, 23, 35 and 47 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/24/05</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2182

DETAILED ACTION

*Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10, 13-22, 25-34, and 37-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hejza (U.S. Patent No. 6,577, 628) in view of Aune (NO 9904240 A).

3. Referring to method claim 1, machine-readable medium claim 13, and apparatus claims 25 and 37, Hejza teaches a method for on-demand management of Internet Protocol (IP) address pools, the method comprising:

allocating an IP address from a local IP address pool designated for a remote domain if a request to connect to the remote domain is received (see lines 17-32 of column 4), said local IP address pool comprising one or more of at least one subnet, each of said at least one subnet specifying a contiguous set of one or more IP addresses (see lines 20-28 of column 8);

Art Unit: 2182

deallocating an IP address back to said local IP address pool if said IP address is relinquished by a remote user (see items labeled 610, 615, and 620 in figure 6).

Hejza fails to teach the limitations of the local address pool being obtained from a global IP address pool and apportioning one or more of said at least one subnet between said global IP address pool and said local IP address pool based upon utilization of said local IP address pool.

Aune teaches in an analogous system and method the above limitations (see abstract, wherein Aune teaches a global and local address pool and more addresses being allocated from the global pool to a local pool experiencing high usage).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system and method of Hejza with the above teachings of Aune. One of ordinary skill in the art would have been motivated to make such modification to provide a high and even degree of utilization of address resources as suggested by Aune (see lines 31-33 of page 3).

4. Referring to method claim 2, machine-readable medium claim 14, and apparatus claims 26 and 38, Hejza teaches configuring

Art Unit: 2182

the local subnet with a subnet from at least one subnet (see lines 20-28 of column 8).

5. Referring to method claim 3, machine-readable medium claim 15, and apparatus claims 27 and 39, Aune teaches requesting one or more packs of addresses if the pool utilization exceeds a first threshold (see abstract, wherein Aune teaches a "going empty" condition); and

releasing one or more packs of addresses if pool utilization falls below a second threshold (see abstract, wherein Aune teaches a number of addresses reaching a predefined threshold.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system of Hejza with the teaching of Aune. Upon such combination the pack of addresses would be contiguous address as taught by Hejza. One of ordinary skill in the art would have been motivated to make such modification in order to provide a high and even degree of utilization of address resources as suggested by Aune (see lines 31-33 of page 3).

6. Referring to method claim 4, machine-readable medium claim 16, and apparatus claims 28 and 40, Hejza teaches the local pool

Art Unit: 2182

size can be configured automatically from a network administration terminal as usage conditions change (see lines 65 of column 8 to line 14 of column 9) and Aune teaches the local pools reporting utilization information to the global processor at regular intervals (see lines 21-27 of page 5).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the combination of Hejza and Aune such that the local pool is polled for utilization information. One of ordinary skill in the art would have been motivated to make such modification in order for the regular intervals to be set at the network administration terminal.

7. Referring to method claim 5-8, machine-readable medium claim 17-20, and apparatus claims 29-32 and 41-44, the combination of Hejza and Aune teaches requesting and releasing a subnet of a predetermined size and suggests the size of the subnet can be adjusted to minimize traffic (see lines 17-20 on page 5). Any adjustment is going to be somehow relative (larger or smaller) then a previous size and the current subnet size and initial subnet size are the same if there is currently only one subnet and a second is being requested.

Art Unit: 2182

8. Referring to method claims 9 and 10, machine-readable mediums claim 21 and 22, and apparatus claims 33,34,45, and 46, the combination of Hejza and Aune teaches the releasing further comprises removing the summarized route for said one or more subnet from a routing table associated with the local IP address pool and the requesting further comprises inserting a route summary for the requested one or more subnet if the requested one or more subnet is received (see Hejza lines 46-65 of column 10).

9. Claims 12,24,36, and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hejza in view of Aune as applied to claims 1,13,25, and 37 above and further in view of Applicant's admitted prior art (AAPA).

10. Referring to method claim 12, machine-readable medium claim 24, and apparatus claims 36 and 48, the combination of Hejza and Aune teaches the apparatus and method comprise a remote domain (see figure 2 and lines 16-30 of page 4), however the Hejza-Aune combination fails to teach the remote domain comprising a virtual private network (VPN).

Art Unit: 2182

Applicant admits at paragraph 7 of page 4 of the instant application, that PPP sessions are typically terminated on a home gateway, at a remote domain such as a VPN.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the Hejza-Aune combination with AAPA. One of ordinary skill in the art would have been motivated to make such modification because PPP sessions are typically terminated at a VPN as admitted by the applicant.

11. Referring to apparatus claim 49, the combination of Hejza and Aune fails to teach the global IP address pool comprises an Authentication, Authorization and Accounting (AAA) server and the global IP address interface comprises an AAA proxy configured to communicate with said AAA server using the RADIUS protocol.

Applicant admits at paragraph 6 of page 4 of the instant application, that AAA servers and the RADIUS protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the Hejza-Aune combination with AAPA. One of ordinary skill in the



Art Unit: 2182

art would have been motivated to make such modification because the use of AAA servers and RADIUS protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user as admitted by the applicant.

12. Referring to apparatus claim 50, the combination of Hejza and Aune fails to teach the global IP address pool comprises Dynamic Host Configuration Protocol (DHCP) server and the global IP address interface comprises an Ring Access Controller client configured to communicate with said DHCP server using the DHCP protocol.

Applicant admits at paragraph 5 starting on page 3 of the instant application, that DHCP servers and the DHCP protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the Hejza-Aune with AAPA. One of ordinary skill in the art would have been motivated to make such modification because the use of DHCP servers and DHCP protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user as admitted by the applicant.

*Allowable Subject Matter*

13. Claims 11,23,35, and 47 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 51-54 are allowed.

*Response to Arguments*

14. Applicant's arguments filed 12/27/05 have been fully considered but they are not persuasive. The applicant argues:

1) Hejza fails to teach allocating an IP address from a local pool address pool designated for a remote domain if a request to connect to the remote domain is received (see first full paragraph of page 23);

2) Hejza fails to teach the local IP address pool comprises at least one subnet, each subnet specifying a contiguous set of one or more IP addresses (see second full paragraph of page 23).

3) Hejza fails to teach deallocating an address back to the local address pool (see third full paragraph of page 23);

4) Hejza fails to teach configuring the local pool with at least one subnet (see second full paragraph of page 24);

5) Aune fails to teach monitoring the number of IP addresses in use by remote users (see 3 paragraph on page 25);

6) Hejza fails to teach the local IP address pool can be configured automatically from a network administration terminal (see second full paragraph of page 26);

7) Hejza in view of Aune fails to teach adjusting the subnet size relative to the previous subnet size (see third full paragraph of page 27).

15. As per arguments 1-4,6, and 7, the Examiner disagrees. Hejza teaches receiving a request to connect to a remote network (see item 310 in figure 3, note the ISP the user is attempting to connect to is a remote domain as it is a network distant from the user (see lines 49-57 of column 4). The ISP is assigned a subset of IP addresses from the set of all of the IP addresses available. Hejza teaches the set of IP addresses for the ISP is a contiguous set. A subnet is merely a set of contiguous IP addresses (see paragraph 4 of the instant application). Hejza teaches the IP addresses are assigned via DHCP (see paragraph bridging columns 3 and 4). When a system uses DHCP to assign address, the addresses are returned to the address pool from

which they are assigned in order to be reused (see lines 39-63 of column 5). Hejza further teaches the pool can be reconfigured from an administration terminal (see paragraph bridging columns 8 and 9).

16. As per arguments 5 and 7, the Examiner disagrees. Aune monitors the usage of the address pools (see abstract, see going empty condition). The combination of Hejza and Aune teaches requesting and releasing a subnet of a predetermined size and suggests the size of the subnet can be adjusted to minimize traffic (see Aune, lines 17-20 on page 5). Any adjustment is going to be somehow relative (larger or smaller) than a previous size and the current subnet size and initial subnet size are the same if there is currently only one subnet and a second is being requested.

#### *Conclusion*

17. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action

Art Unit: 2182

is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J. Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 8:00AM - 4:30PM.

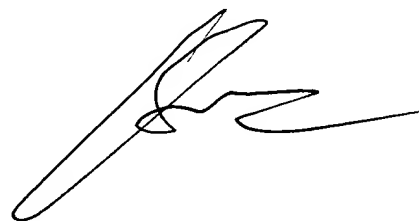
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2182

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJS

March 27, 2006



**KIM HUYNH**  
**SUPERVISORY PATENT EXAMINER**

3/28/06